Claims

1. Method for localizing the position of at least two emission units, especially for monitoring at least one parameter for a plurality of wheels pertaining to a motor vehicle

(a) in which a part N of the emission units is allocated to a first transmitter group and the other part M of the emission units to a second transmitter group, with a local region being allocated to each transmitter group,

(b) in which the transmitted signals of the emission units are detected by means of a receiver antenna of the receiver unit of an evaluation and control unit (5),

(c) in which the reception signals are created in such a way that the reception power of the reception signals of emitters of the first transmitter group is in each case sufficiently higher than the reception signals of emitters of the second transmitter group detected over a long time span in each case,

(d) in which the reception power of at least two reception signals is averaged over a predetermined time span or a predetermined number of discretely scanned values of the reception power or over a predetermined number of intermittently transmitted signals,

(e) in which the N reception signals with the N highest average values or the relevant emission units are allocated to the first transmitter group, and the M reception signals with the M lowest average values or the relevant emission units are allocated to the second transmitter group,

(f) in which the reception signal of the first transmitter group is determined with the smallest average value and the reception signal of the second transmitter group with the highest average value and the difference in amount of these average values or the ratio of these average values is compared with a predetermined reliability threshold value,

(g) in which the allocation of the reception signals or the relevant emission units of the first or second transmitter groups or the local regions allocated to these is only deemed to be correct if the difference in amount or the ratio of the average values is greater than the reliability threshold value, and

(h) in which for the case that the difference in amount or the ratio of the average value is less than the reliability threshold value at least one additional decision criterion is used for allocating the reception signals or the relevant emission units to the transmitter groups or their local regions and/or an additional criterion for testing the

reliability of the correct allocation preferably by using additional characteristic variables of the reception signals.

2. Method according to claim 1, characterized in that the end result of the allocation is only deemed to be correct if all the allocation results, by using the one decision criterion or a plurality of additional decision criteria correspond with the first allocation result, possibly even if the first and also all the additional decision criteria for testing the reliability of a correct allocation yield a negative result.

3. Method according to claim 1 or 2, characterized in that the reception signals are scanned intermittently or intermitting transmitted signals are used and that as an additional characteristic variable for the reception signals, the number of discrete reception signal values which are greater or less than a predetermined discriminator threshold value are determined, in which case preferably a minimum number of discrete reception signal values is detected for each reception signal and the relative frequency of the reception signal value above or below the threshold value is determined for each reception signal.

4. Method according to claim 3, characterized in that as a test with regard to the reliability of the allocation by using the determined relative frequency values, the minimum

difference in amount of the relative frequency values is determined for all the reception signals of the first and second transmitter group and compared with a predetermined additional reliability threshold value, in which case a positive test result is assumed if the minimum difference in amount is greater than the additional reliability threshold value and in which case a negative test result is assumed if the minimal difference in amount is less than the additional reliability threshold value.

5. Method according to claim 4, characterized in that the discriminator threshold value is determined depending on the characteristic parameters of the relevant reception signals.

6. Method according to claim 5, characterized in that the discriminator threshold value is determined depending on the detected average values of the smallest reception signal of the first transmitter group and the largest reception signal of the second transmitter group preferably at a relative interval from one of the average values of these two reception signals or as a ratio with regard to one of the average values of these two reception signals.

7. Method according to claim 5 or 6, characterized in that in an initial state of the method for the discriminator threshold value, a predetermined starting value is used and in the case

of a repeated implementation of the method the discriminator threshold value which has been determined anew in the preceding allocation process can then be used in subsequent methods in each case.

8. Device for localizing the position of at least two emission units, especially for monitoring at least one parameter for a plurality of wheels pertaining to a motor vehicle,

(a) in which a part N of the emission units is allocated to a first transmitter group and the other part M of the emission units to a second transmitter group in which case a local region is allocated to each transmitter group,

(b) in which the transmitted signals of the emission units are detected by means of a receiver antenna of the receiver unit of an evaluation and control unit (5),

(c) in which the reception signals, especially by means of a suitable positioning of the receiver antenna, are created in such a way that the reception power of the reception signals of emitters of the first transmitter group is in each case sufficiently higher than the reception signals of emitters of the second transmitter group detected over a long time span in each case,

(d) in which the evaluation and control unit in each case detects and averages the reception power of at least two reception signals over a predetermined time span or in each case discretely scans and averages a predetermined number of values of the reception power of the reception signals or in each case detects and averages a predetermined number of signals sent intermittently,

(e) in which the evaluation and control unit (5) allocates the N reception signals with the N highest average values or the relevant emission units to the first transmitter group, and the M reception signals with the M lowest average values or the relevant emission units to the second transmitter group,

(f) in which the evaluation and control unit determines the reception signal of the first transmitter group with the lowest average value and the reception signal of the second transmitter group with the highest average value and compares the difference in amount of these average values or the ratio of these average values with the predetermined reliability threshold value,

(g) in which the evaluation and control unit (5) only accepts the allocation of the reception signals or the relevant emission units to the first or the second transmitter group or to these locally allocated regions to be correct if the

difference in amount or the ratio of the average values is greater than the reliability threshold value, and

(h) in which the evaluation and control unit (5) for the case that the difference in amount or the ratio of the average value is less than the reliability threshold value at least one additional decision criterion is used for allocating the reception signals or the relevant emission units to the transmitter groups or their local regions and/or an additional criterion for testing the reliability of the correct allocation preferably by using additional characteristic variables of the reception signals.

9. Device according to claim 8, characterized in that the evaluation and control unit also implements the procedural steps according to one of the claims 1 to 7.

10. Device according to claim 8 or 9 for monitoring at least one parameter for a plurality of wheels pertaining to a motor vehicle, characterized in that in a motor vehicle an emission unit is fitted in each wheel position, but on a wheel and the emission units in the wheel positions are allocated to the rear axle of the first transmitter group and the emission units in the wheel positions to the front axle of the second transmitter group.